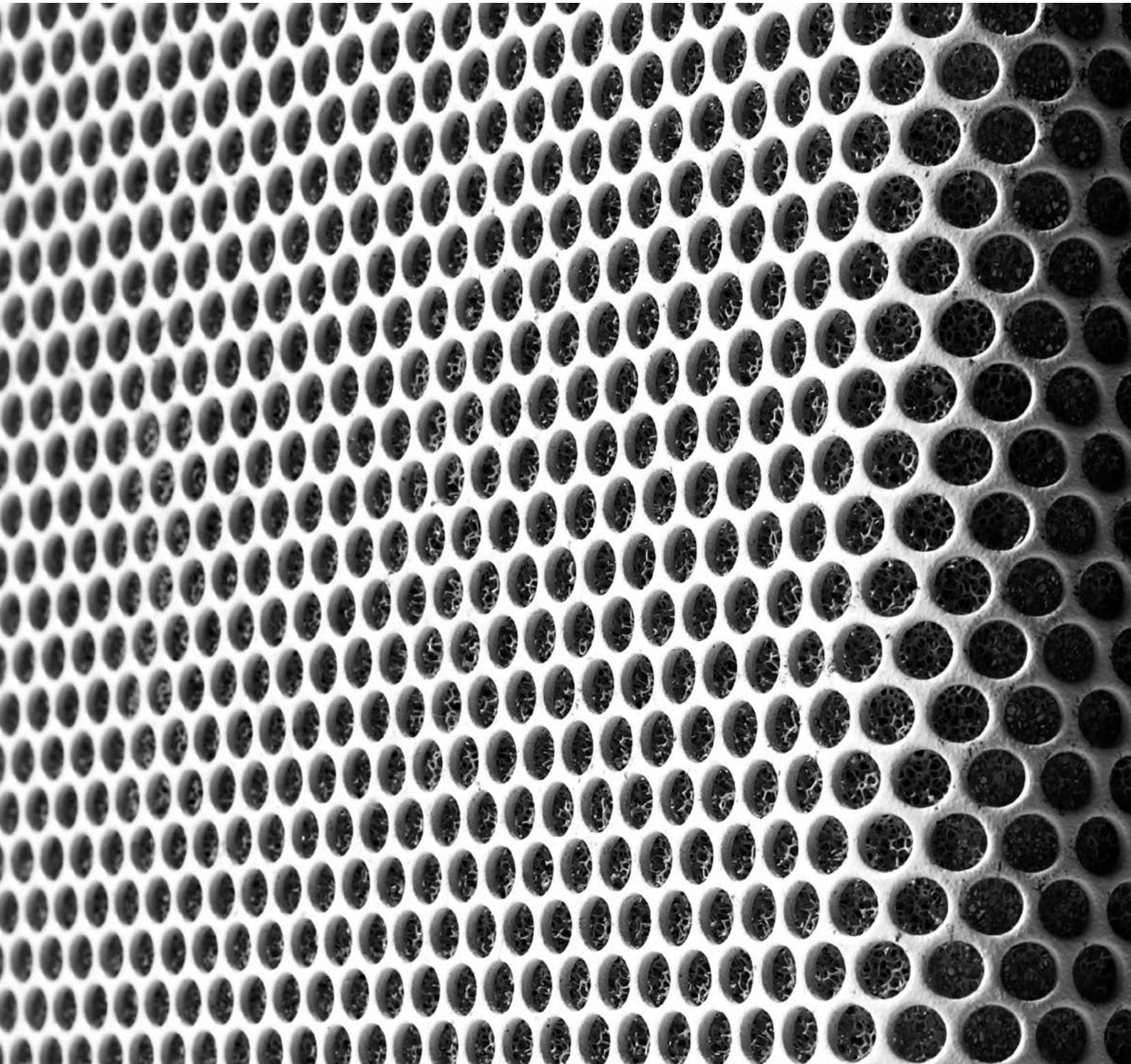
xS

xS-Series



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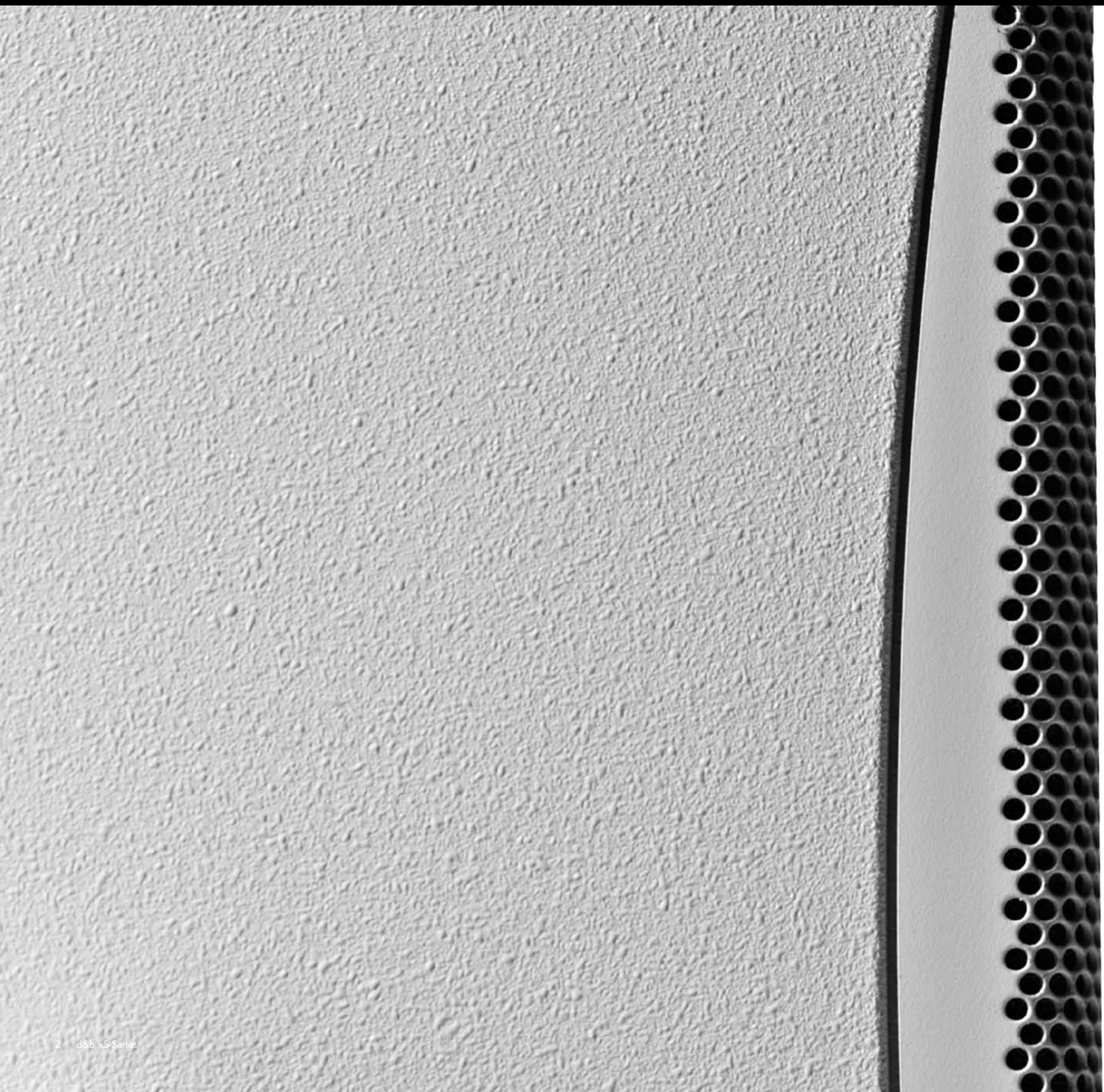

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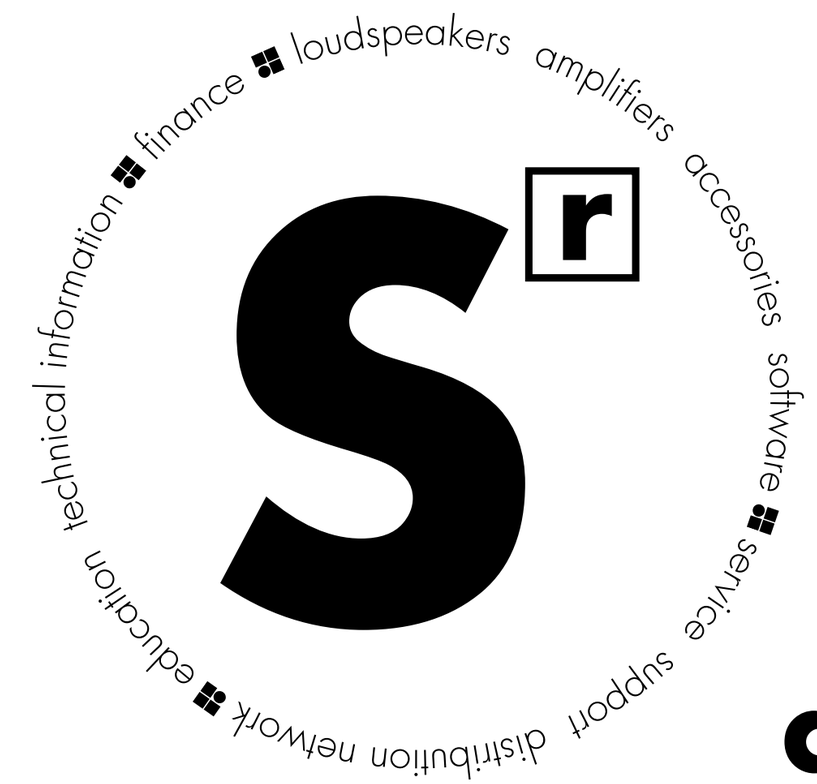
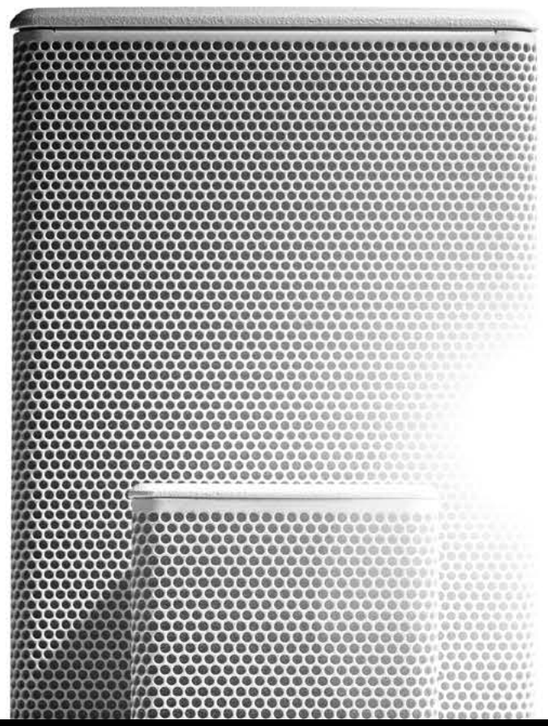

loudspeakers amplifiers accessories software
service support distribution network education technical information finance

d&b System reality

As the name implies a d&b audiotechnik system is not just a loudspeaker. Nor is it merely a sum of the components: loudspeakers, amplifiers, accessories and software. Right from the outset the d&b audiotechnik approach was to build integrated sound reinforcement systems that actually are more than the combination of parts: an entirety where each fits all. Every element is tightly specified, precisely aligned and carefully integrated to achieve maximum efficiency. For ease of use, all the user-definable parameters are integrated, allowing the possibility of adjustment, either via remote control surfaces or directly on the amplifiers. Neutral sound characteristics leave the user all the freedom needed to realise whatever the brief. At the same time d&b offers integrated finance, service and support, a knowledgeable distribution network, education and training as well as technical information, so the same optimal acoustic result is achieved consistently by every system anywhere, at any time. In reality: the d&b System reality.



The **xS-Series** point source loudspeakers are designed for visual, physical, acoustical and electrical integration into permanently installed applications and are intended for environments that go beyond rider specified performance spaces.

The loudspeakers encompass a broad range of sizes and output powers and share the same clean and unobtrusive industrial design for use in stand-alone applications. Each has specialized fittings with capped recessed threads to which discreet mounting hardware is attached. Rotatable horns deliver additional flexibility in terms of mounting options. Both the cabinets and available accessories can be properly colour matched to interior designs. Intended applications include town halls, conference and meeting facilities, theatres and opera houses, ball rooms, houses of worship, restaurants, bars, lounges and night clubs, lecture theatres and assembly halls.

The xS-Series

The xS-Series loudspeakers are 2-way, passive, high performance cabinets, with each name reflecting the particular size of LF driver employed.
The ultra compact **4S** and compact **5S** are designed for installed sound applications where the sonic performance to size ratio is most critical. Each offer a constant and wide coverage even at close listening positions.
The **8S** is a bass-reflex enclosure offering a matching solution when space requirements and enhanced acoustic performance is important.
The **10S/10S-D** represent the heart of the xS-Series and are designed with a complete set of acoustical and mechanical options to realize any challenge.
The **12S/12S-D** mark the upper end of the xS-Series and by providing extended LF from a single cabinet are suitable for a wide range of installed sound applications. The point source biaxial designs of 10S/10S-D and 12S/12S-D have physically symmetrical horn flanges enabling rotation of the entire horn assembly by 90°.

The xS-Series loudspeakers are supported by a range of compact bass-reflex subwoofers. The compact **12S-SUB** is an ideal low end extension in small and medium sized venues or where space is restricted. The **18S-SUB** completes all program material with that deep, round, warm and musical low end of today's performance expectations. The **27S-SUB**´s patented cardioid dispersion avoids unwanted energy behind the system and greatly reduce the excitation of the reverberant field at low frequencies providing highest accuracy in low frequency reproduction. The special passive cardioid design of the 27S-SUB allows the system to be powered by a single amplifier channel.

All xS-Series cabinets and accessories are available in black whilst the 4S, 5S, 8S and 12S-SUB including their respective accessories are also available in white as standard.
Additionally all the xS cabinets and accessories can be ordered with a Weather Resistant (WR) and Special Colour (SC) option. The WR option provides an IP34 rating, and enables operation of loudspeakers in changing ambient conditions, however it is not intended to enable permanent, unprotected operation of loudspeakers outdoors. The Weather Resistant cabinet is supplied with a fixed cable with a PG cable gland, coated with PCP (Polyurea Cabinet Protection) and is available in black only. The

4S loudspeaker

5S loudspeaker

8S loudspeaker

10S/10S-D loudspeakers

12S/12S-D loudspeakers

12S subwoofer

18S subwoofer

27S subwoofer

WR option is not available for 4S and 5S cabinets, as the standard versions are already rated IP34. The SC option for all loudspeaker cabinets and most accessories can be executed in all RAL colours.

The d&b software offering aides the entire system setup process, from the simulation and planning of the loudspeaker systems, to the remote control and monitoring of the system functions during the event, followed by service functionality to verify system performance. The **ArrayCalc** simulation software allows the virtual optimization of loudspeaker line arrays, point source and column loudspeakers as well as subwoofers and their adjustment to venue conditions. Using the R1 export function, a project file containing the simulation data including the respective amplifier settings is generated for deployment to the **R1** Remote control software. R1 then feeds the settings to the amplifiers from a central location to allow rapid verification and fine adjustment on site. Service functions enable firmware updates of the amplifiers as and when these are available.

The d&b **D6** and **D12** dual channel as well as the **D80** four channel amplifiers realize the complete system and incorporate d&b loudspeaker specific configuration information. They provide three different power ranges and have analog and digital signal inputs and links. These devices are specially designed and manufactured by d&b utilizing Digital Signal Processing and include switchable functions for precisely tailoring system response for a wide variety of applications. Delay capabilities and equalization on each channel of every amplifier reduce the need for external processing devices, with user definable 4-band parametric EQ for the D6 and D12 compared to the two 16-band equalizers incorporated into the D80.

D6 amplifier

D12 amplifier

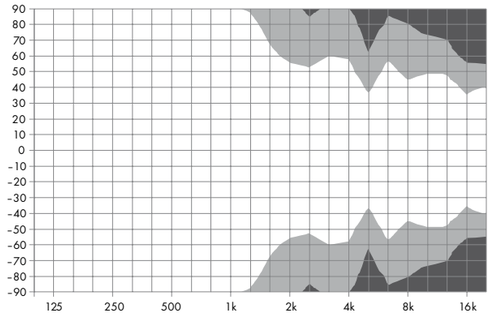
D80 amplifier

The 4S loudspeaker

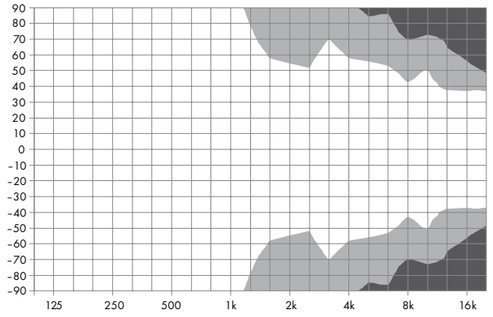
4S loudspeaker
The 4S is a lightweight 2-way passive loudspeaker using a neodymium LF driver and a coaxially mounted wide dispersion dome tweeter. The coaxial designed 4S employs a 4″ driver in a highly compact sealed enclosure and offers a symmetrical dispersion pattern in the horizontal and vertical plane while the cabinet may be mounted in either orientation.
It can be used stand-alone or supplemented by different subwoofers from the xS-Series.
The enclosure is injection moulded with an impact resistant black or white paint finish. The front of the loudspeaker cabinet is protected by a rigid metal grill backed by an acoustically transparent foam and incorporated into the rear panel are two M8 threaded inserts.

System data
Frequency response (–5 dB standard)..... 130 Hz - 20 kHz
Frequency response (–5 dB CUT mode).....180 Hz - 20 kHz
Max. sound pressure (1 m, free field)[1] .....
with D6.....114 dB
with D12 .....115 dB
with D80 .....115 dB
Input level (100 dB SPL/1 m)..... –4 dBu

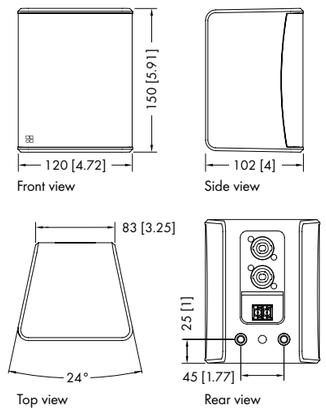
Loudspeaker data
Nominal impedance.....16 ohms
Power handling capacity (RMS/peak 10 msec).....60/400 W
Nominal dispersion angle.....100° conical
Components.....4″ driver with neodymium magnet
.....0.75″ dome tweeter coaxially mounted
.....passive crossover network
Connections .....2 x NL4
.....screw terminal block
Weight.....1 kg (2 lb)



4S horizontal dispersion characteristics[2]



4S vertical dispersion characteristics[2]



4S cabinet dimensions in mm [inch]

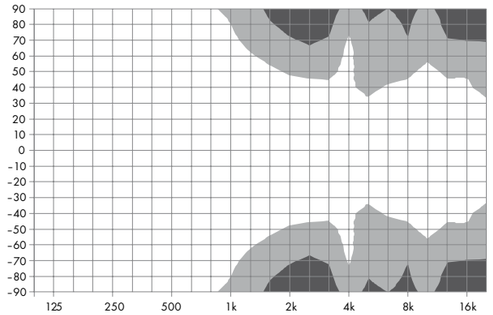
1 Broadband measurement, pink noise, crest factor 4, peak measurement, linear weighting
2 Dispersion angle vs frequency plotted using lines of equal sound pressure (isobars) at –6 dB and –12 dB

The 5S loudspeaker

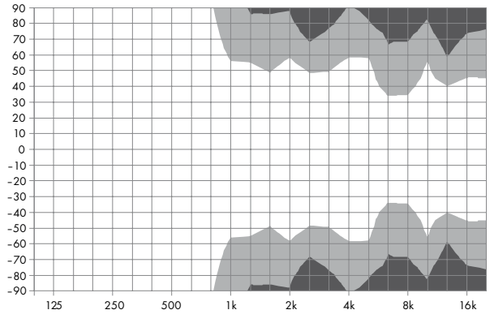
5S loudspeaker
The 5S is a lightweight 2-way passive loudspeaker using an LF driver and a coaxially mounted wide dispersion dome tweeter. The coaxial designed 5S employs a 5″ driver in a compact bass-reflex enclosure and offers a symmetrical dispersion pattern in the horizontal and vertical plane while the cabinet may be mounted in either orientation.
It can be used stand-alone or supplemented by different subwoofers of the xS-Series.
The enclosure is injection moulded with an impact resistant black or white paint finish. The front of the loudspeaker cabinet is protected by a rigid metal grill backed by an acoustically transparent foam and incorporated into the rear panel are two M8 threaded inserts.

System data
Frequency response (–5 dB standard)..... 80 Hz - 20 kHz
Frequency response (–5 dB CUT mode) .....130 Hz - 20 kHz
Max. sound pressure (1 m, free field)[1] .....
with D6 .....117 dB
with D12 .....118 dB
with D80 .....118 dB
Input level (100 dB SPL/1 m) ..... –6 dBu

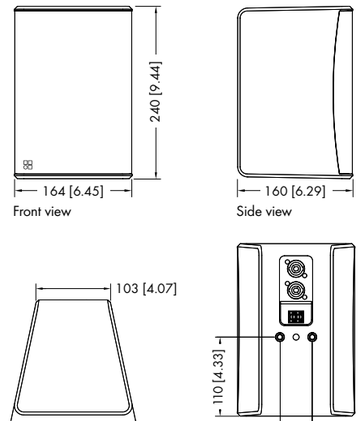
Loudspeaker data
Nominal impedance.....16 ohms
Power handling capacity (RMS/peak 10 msec).....60/400 W
Nominal dispersion angle..... 100° conical
Components.....5″ driver
..... 1″ dome tweeter coaxially mounted
.....passive crossover network
Connections .....2 x NL4
.....screw terminal block
Weight.....2.5 kg (5.5 lb)



5S horizontal dispersion characteristics[2]



5S vertical dispersion characteristics[2]



5S cabinet dimensions in mm [inch]

1 Broadband measurement, pink noise, crest factor 4, peak measurement, linear weighting
2 Dispersion angle vs frequency plotted using lines of equal sound pressure (isobars) at –6 dB and –12 dB

The 8S loudspeaker

8S loudspeaker

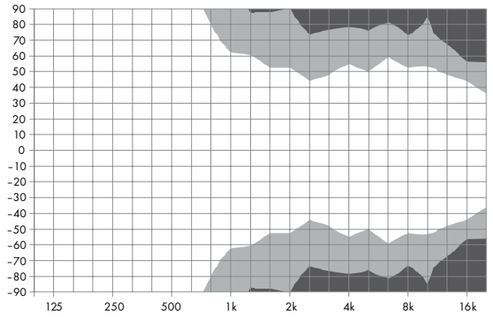
The 8S is a full range, 2-way loudspeaker in a bass-reflex enclosure, utilizing an 8"/1" coaxial driver combination with a passive crossover. The coaxial design offers a symmetrical dispersion pattern in the horizontal and vertical plane while the cabinet may be mounted in either orientation.
With its frequency response from 70 Hz to 20 kHz the 8S can be used as a full range system or can be supplemented by different subwoofers from the xS-Series.
The enclosure is constructed from marine plywood with an impact resistant black or white paint finish. The front of the loudspeaker cabinet is protected by a rigid metal grill backed by an acoustically transparent foam. The top and bottom panels incorporate an M8 threaded insert, whilst the rear panel incorporates two.

System data

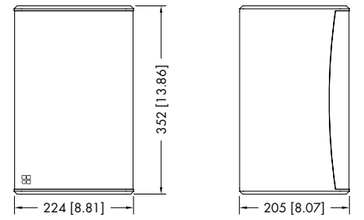
Frequency response (–5 dB standard)..... 70 Hz - 20 kHz
Frequency response (–5 dB CUT mode)..... 110 Hz - 20 kHz
Max. sound pressure (1 m, free field)[1].....
with D6 ..... 124 dB
with D12 ..... 127 dB
with D80 ..... 127 dB
Input level (100 dB SPL/1 m) ..... –10 dBu

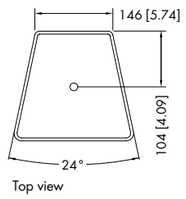
Loudspeaker data

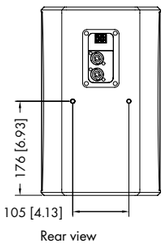
Nominal impedance ..... 16 ohms
Power handling capacity (RMS/peak 10 msec)..... 150/800 W
Nominal dispersion angle ..... 100° conical
Components ..... 8" driver with neodymium magnet
..... 1" compression driver coaxially mounted
..... passive crossover network
Connections ..... 2 x NL4
..... screw terminal block
Weight ..... 7.4 kg (16 lb)



8S dispersion characteristics[2]







8S cabinet dimensions in mm [inch]

1 Broadband measurement, pink noise, crest factor 4, peak measurement, linear weighting
2 Dispersion angle vs frequency plotted using lines of equal sound pressure (isobars) at –6 dB and –12 dB

The 10S/10S-D loudspeakers

10S/10S-D loudspeakers

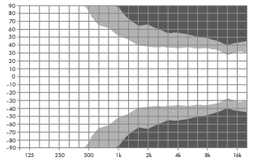
The biaxial 10S/10S-D are high performance 2-way loudspeakers employing a single 10" driver in a bass-reflex enclosure and different HF sections for a wide range of installed sound applications. All models are lightweight passive designs using neodymium drivers and large constant directivity horns for accurate pattern control. The 10S/10S-D are single box solutions providing rotatable dispersion characteristics of 75° x 50° and 110° x 55° respectively.
With their frequency response from 60 Hz to 18 kHz both versions can be used as full range systems and can also be supplemented by different subwoofers from the xS-Series.
The enclosures are constructed from marine plywood with an impact resistant black paint finish. The front of the loudspeaker cabinets are protected by a rigid metal grill backed by an acoustically transparent foam. The top and bottom panels incorporate a pair of M10 threaded inserts, whilst the rear panel incorporates two M8 threaded inserts. The loudspeakers are Ball Impact Resistant according to DIN 18032-3 for sports and multipurpose halls.

System data

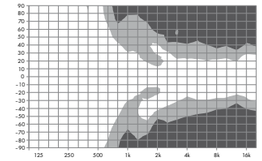
Frequency response (–5 dB standard) ..... 60 Hz - 18 kHz
Frequency response (–5 dB CUT mode) ..... 100 Hz - 18 kHz
Max. sound pressure (1 m, free field)[1] .....
10S/10S-D with D6 ..... 127 dB
10S/10S-D with D12 ..... 130 dB
10S/10S-D with D80 ..... 130 dB
Input level (100 dB SPL/1 m) ..... –12 dBu

Loudspeaker data

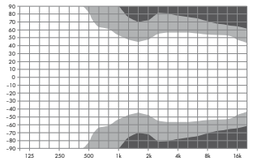
Nominal impedance ..... 12 ohms
Power handling capacity (RMS/peak 10 msec)..... 200/1200 W
Nominal dispersion angle 10S/10S-D (h x v) .....
..... 75° x 50°/110° x 55° rotatable
Components ..... 10" driver with neodymium magnet
..... 1.4" compression driver with CD horn
..... Passive crossover network
Connections ..... 2 x NL4
..... screw terminal block
Weight ..... 13 kg (29 lb)



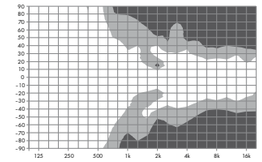
10S horizontal dispersion characteristics[2]



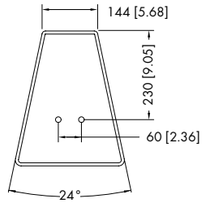
10S vertical dispersion characteristics[2]

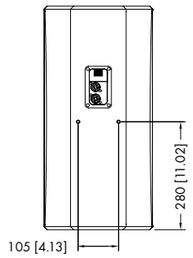


10S-D horizontal dispersion characteristics[2]



10S-D vertical dispersion characteristics[2]





10S/10S-D cabinet dimensions in mm [inch]

1 Broadband measurement, pink noise, crest factor 4, peak measurement, linear weighting
2 Dispersion angle vs frequency plotted using lines of equal sound pressure (isobars) at –6 dB and –12 dB

The 12S/12S-D loudspeakers

12S/12S-D loudspeakers

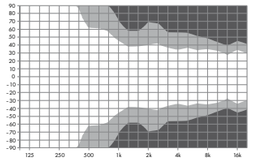
The biaxial 12S/12S-D are high performance 2-way loudspeakers employing a single 12″ driver in a bass-reflex enclosure and different HF sections for a wide range of installed sound applications. Both versions are lightweight passive designs using neodymium drivers and large constant directivity horns for accurate pattern control. The 12S/12S-D are single box solutions providing rotatable dispersion characteristics of 75° x 50° and 110° x 55° respectively.
With their extended frequency response from 48 Hz to 18 kHz both versions can be used as full range systems and can also be supplemented by different subwoofers of the xS-Series.
The enclosures are constructed from marine plywood with an impact resistant black paint finish. The front of the loudspeaker cabinets are protected by a rigid metal grill backed by an acoustically transparent foam. The top and bottom panels incorporate a pair of M10 threaded inserts, whilst the rear panel incorporates two M8 threaded inserts. The loudspeakers are Ball Impact Resistant according to DIN 18032-3 for sports and multipurpose halls.

System data

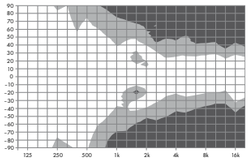
Frequency response (–5 dB standard) ..... 48 Hz - 18 kHz
Frequency response (–5 dB CUT mode) ..... 100 Hz - 18 kHz
Max. sound pressure (1 m, free field)[1] .....
12S/12S-D with D6 ..... 130 dB
12S/12S-D with D12 ..... 133 dB
12S/12S-D with D80 ..... 133 dB
Input level (100 dB SPL/1 m) ..... –14 dBu

Loudspeaker data

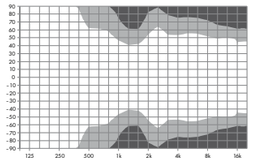
Nominal impedance ..... 8 ohms
Power handling capacity (RMS/peak 10 msec) ..... 300/1600 W
Nominal dispersion angle 12S/12S-D (h x v) .....
..... 75° x 50°/110° x 55° rotatable
Components ..... 12″ driver with neodymium magnet
..... 1.4″ compression driver with CD horn
..... passive crossover network
Connections ..... 2 x NL4
..... screw terminal block
Weight ..... 17 kg (37 lb)



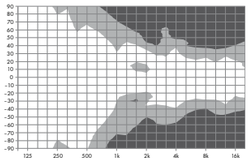
12S horizontal dispersion characteristics[2]



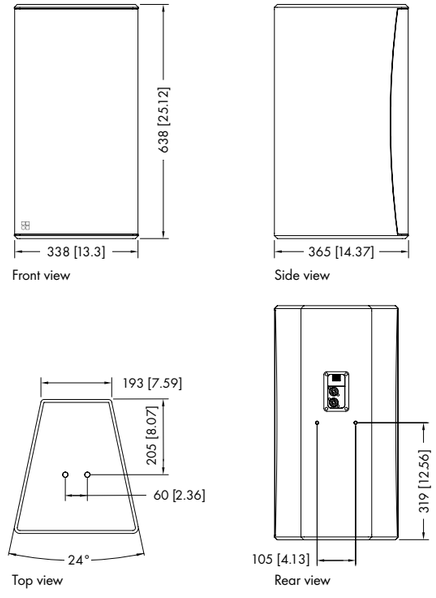
12S vertical dispersion characteristics[2]



12S-D horizontal dispersion characteristics[2]



12S-D vertical dispersion characteristics[2]



12S/12S-D cabinet dimensions in mm [inch]

1 Broadband measurement, pink noise, crest factor 4, peak measurement, linear weighting
2 Dispersion angle vs frequency plotted using lines of equal sound pressure (isobars) at –6 dB and –12 dB

The 12S subwoofer

12S subwoofer

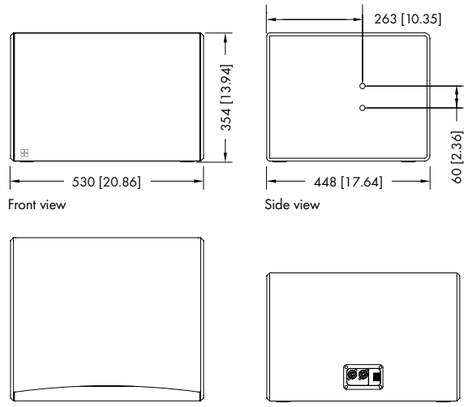
The 12S-SUB is a compact subwoofer for use with the xS-Series loudspeakers. The cabinet houses a long excursion 12″ neodymium driver in a bass-reflex design and it can be used stand-alone, ground stacked or individually flown.
The enclosure is constructed from marine plywood with an impact resistant black or white paint finish. The front of the loudspeaker cabinet is protected by a rigid metal grill backed by an acoustically transparent foam. The side panels incorporate a pair of M10 threaded inserts. The loudspeaker is Ball Impact Resistant according to DIN 18032-3 for sports and multipurpose halls.

System data

Frequency response (–5 dB standard) ..... 45 - 130 Hz
Frequency response (–5 dB 100 Hz mode) ..... 45 - 100 Hz
Max. sound pressure (single cabinet, 1 m, free field)[1] .....
with D6 ..... 124 dB
with D12 ..... 127 dB
with D80 ..... 127 dB

Loudspeaker data

Nominal impedance ..... 8 ohms
Power handling capacity (RMS/peak 10 msec) ..... 300/1600 W
Components ..... 12″ driver with neodymium magnet
Connections ..... 2 x NL4
..... screw terminal block
Weight ..... 16 kg (35 lb)



12S-SUB cabinet dimensions in mm [inch]

1 Broadband measurement, pink noise, crest factor 4, peak measurement, linear weighting

The 18S subwoofer

18S subwoofer

The 18S-SUB is a compact high performance subwoofer for use with the xS-Series and xA-Series loudspeakers. The cabinet houses a long excursion 18" neodymium driver in a bass-reflex design and it can be used stand-alone, stacked or individually flown.

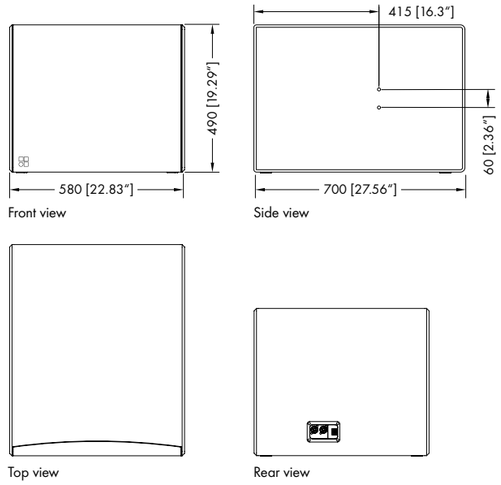
The enclosure is constructed from marine plywood with an impact resistant black paint finish. The front of the loudspeaker cabinet is protected by a rigid metal grill backed by an acoustically transparent foam. The side panels incorporate a pair of M10 threaded inserts. The loudspeaker is Ball Impact Resistant according to DIN 18032-3 for sports and multipurpose halls.

System data

Frequency response (–5 dB standard).....37 - 140 Hz
Frequency response (–5 dB 100 Hz mode).....37 - 100 Hz
Max. sound pressure (single cabinet, 1 m, free field)[1].....
with D6.....129 dB
with D12.....132 dB
with D80.....132 dB

Loudspeaker data

Nominal impedance.....8 ohms
Power handling capacity (RMS/peak 10 msec).....400/1600 W
Components.....18" driver with neodymium magnet
Connections.....2 x NL4
.....screw terminal block
Weight.....32 kg (71 lb)



18S-SUB cabinet dimensions in mm (inch)

[1] Broadband measurement, pink noise, crest factor 4, peak measurement, linear weighting

The 27S subwoofer

27S subwoofer

The 27S-SUB is a compact high performance cardioid subwoofer for use with the xS-Series and xA-Series loudspeakers. The cabinet houses two long excursion neodymium drivers in an integrated cardioid setup: a 15" driver in a bass-reflex design facing to the front and a 12" driver in a two chamber bandpass design radiating to the rear. The arrangement and tuning provide a cardioid dispersion pattern using a single amplifier channel. It can be used stand-alone, ground stacked or individually flown.

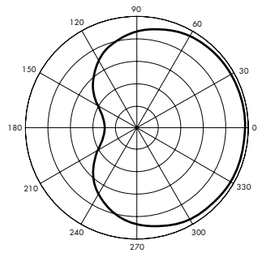
The enclosure is constructed from marine plywood with an impact resistant black paint finish. The front of the loudspeaker cabinet is protected by a rigid metal grill backed by an acoustically transparent foam. The side panels incorporate a pair of M10 threaded inserts. The loudspeaker is Ball Impact Resistant according to DIN 18032-3 for sports and multipurpose halls.

System data

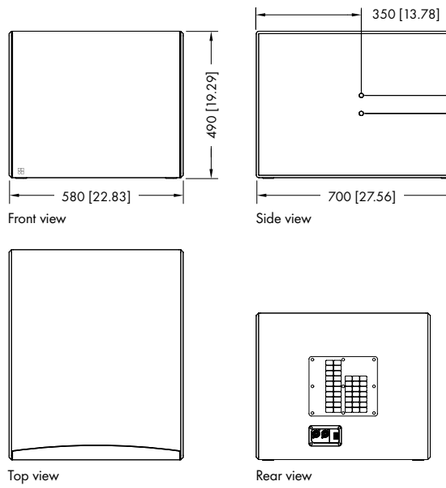
Frequency response (–5 dB standard).....40 - 140 Hz
Frequency response (–5 dB 100 Hz mode).....40 - 100 Hz
Max. sound pressure (single cabinet, 1 m, free field)[1].....
with D6.....128 dB
with D12.....131 dB
with D80.....131 dB

Loudspeaker data

Nominal impedance.....6 ohms
Power handling capacity (RMS/peak 10 msec).....500/2000 W
Components.....
front/rear.....15"/12" driver with neodymium magnet
Connections.....2 x NL4
.....screw terminal block
Weight.....41 kg (90 lb)



Cardioid polar pattern



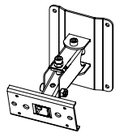
27S-SUB cabinet dimensions in mm [inch]

[1] Broadband measurement, pink noise, crest factor 4, peak measurement, linear weighting

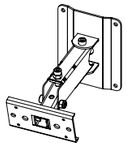
The xS-Series mounting and rigging accessories

Safety approval
d&b loudspeakers and accessories are designed for setup and use within situations requiring compliance with the provisions and directives of BGV C1 Rule for the Prevention of Accidents.

Z5401
Wall mount S

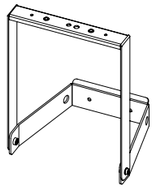


Z5402
Wall mount M

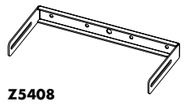


Z5403
Wall mount L

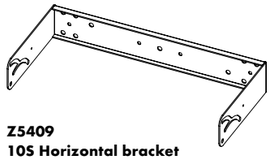
Z5404
8S Flying bracket



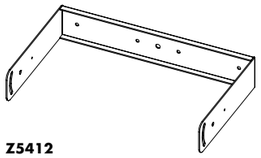
Z5405/Z5406
10S/12S Flying bracket



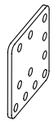
Z5408
8S Horizontal bracket



Z5409
10S Horizontal bracket
Z5411
12S Horizontal bracket

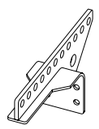


Z5412
12S-SUB Horizontal bracket
Z5410
18S/27S-SUB Horizontal bracket



Z5044
MAX Bracket connector

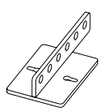
Z5053
Ci60/Ci90
Bracket connector



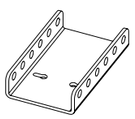
Z5054
Ci60/Ci90 Flying adapter

Z5354
E8/E12 Flying adapter

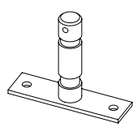
Z5355
E8/E12
Flying adapter link



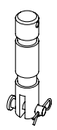
Z5020
Flying adapter 02



Z5025
Flying adapter 03



Z5010
TV spigot with fixing plate



Z5015
TV spigot for
Flying adapter 02

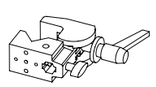
Z5029
TV spigot M10

Z5024
Loudspeaker stand adapter

Z5034
Stand adapter M10

Z5035
Adapter M10 to 3/8"

E6533
Adapter M10
for Super clamp

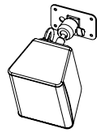


E6532
Super clamp

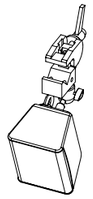
Z5012
Pipe clamp for TV spigot
WLL: 100 kg/220 lb;
for a tube diameter up to
70 mm/2.75”

Z5147
Rota clamp
WLL: 500 kg/1100 lb;
for a tube diameter up to
51 mm/2”

The xS-Series mounting and rigging examples

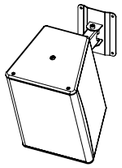


4S/5S with
Z5401 Wall mount S

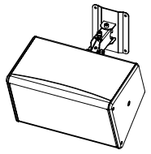


4S/5S with
Z5401 Wall mount S
E6532 Super clamp
E6533 Adapter M10
for Super clamp

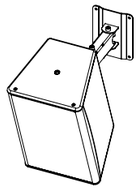
4S/5S with
Z5401 Wall mount S
Z5029 TV spigot M10



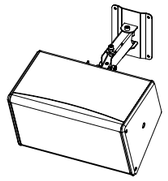
8S/10S/12S with
Z5402 Wall mount M



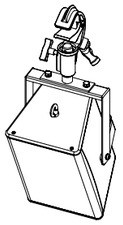
8S/10S/12S with
Z5402 Wall mount M



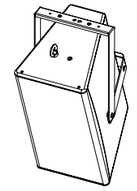
8S/10S/12S with
Z5403 Wall mount L



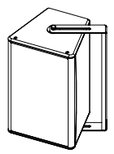
8S/10S/12S with
Z5403 Wall mount L



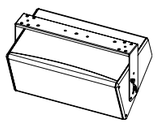
8S with
Z5404 8S Flying bracket
Z5010 TV spigot with fixing plate
Z5012 Pipe clamp for TV spigot



10S/12S with
Z5405/Z5406
10S/12S Flying bracket

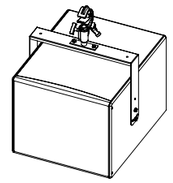


8S with
Z5408 8S Horizontal bracket

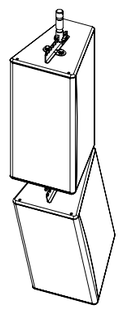


10S/12S with
Z5409/Z5411
10S/12S Horizontal bracket

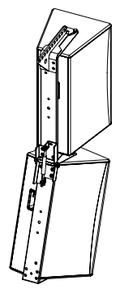
12S-SUB with
Z5412 12S-SUB Horizontal bracket



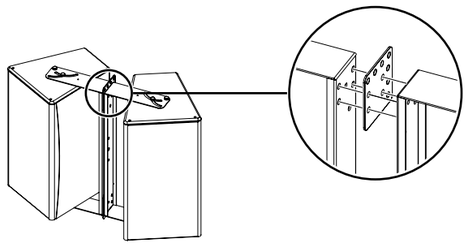
18S/27S-SUB with
Z5410 18S/27S-SUB
Horizontal bracket
Z5010 TV spigot with fixing plate
Z5012 Pipe clamp for TV spigot



10S/12S with
Z5354 E8/E12 Flying adapter
Z5355 E8/E12 Flying adapter link
Z5015 TV spigot 02



10S/12S with
Z5409/Z5411
10S/12S Horizontal bracket
Z5054 Ci60/Ci90 Flying adapter
Z5053 Ci60/Ci90 Bracket connector



10S/12S with
Z5409/Z5411
Horizontal bracket 10S/12S
Z5044 MAX Bracket connector

The d&b ArrayCalc simulation software

The d&b ArrayCalc simulation software is the simulation tool for d&b line arrays, column and point source loudspeakers as well as subwoofers. This is a comprehensive toolbox for all tasks associated with acoustic design, performance prediction, alignment, rigging and safety parameters. For safety reasons d&b line arrays must be designed using the d&b ArrayCalc simulation software.

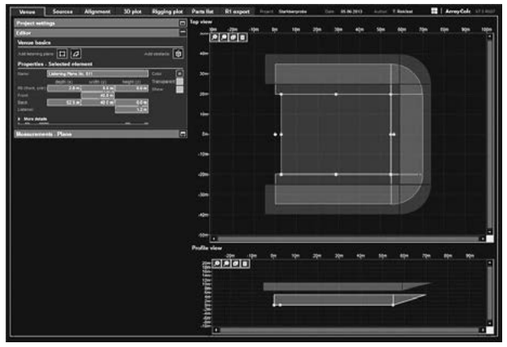
d&b ArrayCalc is available as a native stand-alone application for both Microsoft Windows[1] (Win7 or higher) and Mac OS X[2] (10.6 or higher) operating systems. In combination with the d&b Remote network, this can significantly reduce setup and tuning time in mobile applications, and allows for precise initial simulations when planning installations.

Listening planes in three dimensions can be defined, creating a representation of the audience areas in a given venue. This includes areas such as typical listening planes, arenas, balconies, side stalls, and in the round. Special functions assist in obtaining accurate dimensions with laser distance finders and inclinometers.

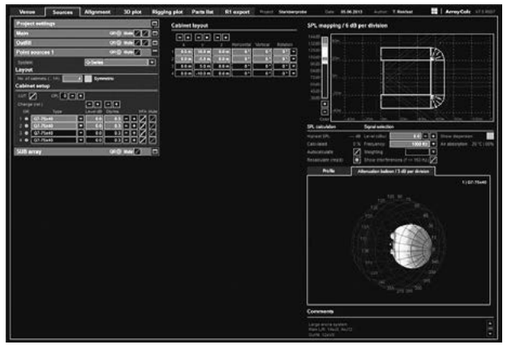
Acoustic obstacles, such as arena video score boards can be added to a model.

The ArrayCalc R1 export function produces a project file for the R1 Remote control software. Complete details of the system simulated in ArrayCalc are generated, including loudspeakers, amplifiers, remote IDs, groups and all configuration information. This workflow sequence removes the need to manually transfer data from one software program to the other. EASE and DXF data export capabilities are also available.

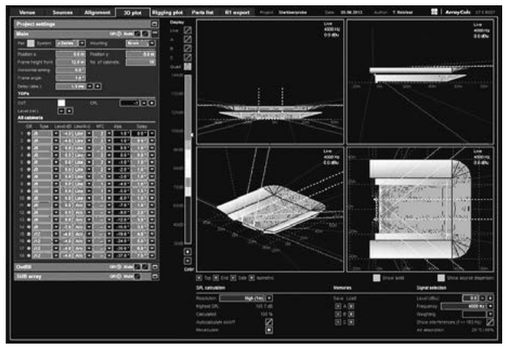
Further information is provided in the d&b Amplifier and Software brochure which is available for download at www.dbaudio.com.



Venue editor



Sources, point sources



3D Plot quad

The d&b Remote network

The remote control capability of the d&b Remote network enables central control and monitoring of a complete d&b loudspeaker system from anywhere in the network, be it from a computer in the control room, at the mix position, or on a wireless tablet in the auditorium. This central access to all functions through the d&b Remote network, to controls as well as detailed system and device diagnostics information, unlocks the full potential of the d&b system approach. In a typical user workflow, the d&b Remote network takes settings optimized in the ArrayCalc simulation software and applies these to all the amplifiers within the network. The importation of settings from ArrayCalc allows the system configuration to be quickly accomplished, providing more time for verification and fine tuning.

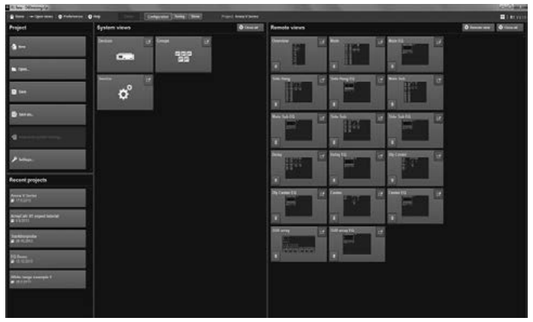
All features, functions and controls available on the front panel of d&b amplifiers may be remotely controlled and/or monitored using R1 Remote control software. This allows each channel of the amplifier to be controlled and enables the creation of groups of loudspeakers. When grouped together, a button or fader can control the overall system level, zone level, equalization and delay, power ON/OFF, MUTE, as well as loudspeaker specific function switches such as CUT/HFA/HFC and CPL. An offline mode is provided for preparation in advance of an event, without the amplifiers being present or connected.

For mobile applications, d&b System check verifies that the system performs within a predefined condition. Extensive facilities for storing and recalling system settings are provided allowing these to be repeated, as and when required. Project files can be easily adjusted for use with a different set of equipment at another location.

In installation projects system integrators can configure the d&b Remote network to offer access to different levels of control, tailored to the operational demands. For example, power ON/OFF for daily use, or more complex functionality for detailed control. Password protection is available to restrict access. Input and Load monitoring allow installation operators to ensure optimum performance at all times.

R1 Remote control software enables d&b amplifiers to be remotely controlled using both Ethernet and CAN-Bus in parallel. The software is optimized for use with touch screen, mouse and keyboard and runs on both Microsoft Windows[1] (Win7 or higher) and Mac OS X[2] (10.6 or higher) operating systems.

Further information is provided in the d&b Amplifier and Software brochure which is available for download at www.dbaudio.com.



Home

Remote in Configuration mode

Open views

[1] Microsoft Windows is a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries

[2] Mac OS is a trademark of Apple Inc., registered in the U.S. and other countries

The D6, D12 and D80 amplifiers

Two decades have passed since d&b embarked on integrating Digital Signal Processing (DSP) into power amplifiers. It is over ten years since all d&b amplifiers used this technology and included analog and digital signal inputs, extensive loudspeaker control, configuration and protection functions, user definable equalization, delay and the all embracing remote control functionality as standard.

The d&b amplifiers sit right at the very heart of the d&b systems, providing sophisticated control capabilities as well as the power to efficiently drive d&b loudspeakers in whatever the particular application. The amplifiers are developed and manufactured by d&b and incorporate loudspeaker specific setups. Sophisticated protection circuits modelling thermal and mechanical driver behaviour are provided, resulting in the sustained reliability of d&b systems. Switchable functions for precisely tailoring system response in a wide variety of applications are also included, integrating complete loudspeaker system management into the amplifier. The digital elements are specified and constructed to achieve outstanding audio performance while maintaining a very low latency of 0.3 msec The amplifiers are designed specifically for use with d&b loudspeakers, have remote control, monitoring capabilities and switch mode power supplies. To simplify configuration, the output mode of the amplifier can be configured as Dual Channel, Mix TOP/SUB or 2-Way Active modes depending on the application. The user definable equalization and delay functions incorporated in each channel of all d&b amplifiers are intended for tuning in applications such as infills, frontfills or under balcony delays, without the need for external processors. A signal generator offering pink noise or a sine wave program is also incorporated for test and alignment purposes.

d&b amplifiers[1] contain functions to allow system status monitoring and protection features, increasing the longevity of d&b systems. They provide the d&b System check function, which is designed to verify the system performs within a predefined condition; this can be used to report the system condition after a show. Input monitoring can detect incoming pilot tones to verify the integrity of the signal path to the amplifier, while the Load monitoring function determines the status of the loudspeaker impedance. Both d&b System check and Load monitoring can determine the status of an LF or HF driver in systems with multiple elements, even if these are crossed over passively. Automatic and continuous impedance monitoring, along with Input monitoring are designed for incorporation in applications specified to the requirements of International Standard IEC 60849 'Sound Systems for Emergency Purposes'.

d&b amplifiers feature two control interfaces. Firstly, the front panel rotary encoder, combined with the display, provides full access to settings and functions. Secondly, by utilizing the d&b Remote network, the amplifiers can be remotely controlled and monitored from a virtual centre. Every amplifier channel can be assigned a unique channel and device name to simplify identification. The Wink function, which can be enabled remotely, flashes the display backlight to clearly identify specific amplifiers in a system. An integrated password protected LOCK function prevents unauthorized changes.

A powerCON[2] mains connector socket is fitted on the rear panel. The switch mode power supply of each amplifier incorporates mains overvoltage protection, inrush current limiting and loudspeaker protection at start up. Temperature and signal controlled fans cool the internal assemblies. d&b amplifiers offer analog and digital AES/EBU signal inputs, with link outputs for each channel. The AES/EBU link output carries a refreshed signal, while a power fail relay is incorporated to prevent interruption of the signal chain, in the event of a power failure.

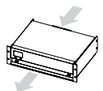
The D12 amplifier incorporates d&b SenseDrive for accurate control of LF drivers in d&b loudspeakers driven 2-Way Active or in actively driven d&b subwoofers. When the D12 is fitted with EP5 connectors and appropriate 5-wire cabling, d&b SenseDrive can be used resulting in an extremely precise bass performance even at high levels. The LoadMatch function integrated within the D80 amplifier enables the electrical compensation of loudspeaker cable properties, without the need for an extra conductor. This results in an increased accuracy of audio reproduction over a bandwidth of up to 20 kHz preserving the tonal balance when cable lengths of up to 70 m (230 ft) are used.

Firmware updates containing new loudspeaker configurations or additional functions can be loaded to the amplifiers via the d&b Remote network.

1 At the time of print, certain functions required within applications specified to achieve compliance with IEC 60849 such as Input and Load monitoring are not implemented in the D80 amplifier, please contact your distributor for further information

2 powerCON® is a registered trademark of the Neutrik AG, Liechtenstein

Comparison of the D6, D12 and D80 amplifiers

	D6	D12	D80
User interface	Encoder/LC display	Encoder/LC display	Encoder/colour TFT touchscreen
Output channels	2	2	4
Input channels	2 AES or analog	2 AES or analog	4 AES or analog
Latency	0.3 msec	0.3 msec	0.3 msec
User equalizers (per channel)	4-band	4-band	2 x 16-band
Delay	340 msec/116.9 m	340 msec/116.9 m	10 sec/3440 m
Rated output power	2 x 300 W into 8 ohms 2 x 600 W into 4 ohms (THD+N < 0.1%)	2 x 750 W into 8 ohms 2 x 1200 W into 4 ohms (THD+N < 0.1%)	4 x 2000 W into 8 ohms 4 x 4000 W into 4 ohms (THD+N < 0.5%, 12 dB crest factor)
Output routing	Dual Channel w/o B1 and B2	Dual Channel, Mix TOP/SUB 2-Way Active	Dual Channel, Mix TOP/SUB 2-Way Active
Output connectors	NL4	NL4/EP5/NL8	NL4/EP5 plus central NL8
Cable compensation	No	SenseDrive	LoadMatch
Mains voltage	Wide range switch mode power supply	100/200V or 120/230V	Wide range switch mode power supply
Weight (kg/lb)	8/17.6	13/28.7	19/42
Dimensions	2 RU x 19" x 353 mm	3 RU x 19" x 353 mm	2 RU x 19" x 530 mm
Remote	CAN	CAN	OCA via Ethernet/CAN
Airflow			

The operation with D6, D12 and D80 amplifiers

CUT mode
Set to CUT, the cabinet low frequency level is reduced and is configured for use with d&b active subwoofers.

HFA mode
In HFA mode (High Frequency Attenuation), the HF response of the system is rolled off. The HFA provides a natural, balanced frequency response when a unit is placed close to listeners in near field or delay use. High frequency attenuation begins gradually at 1 kHz, dropping by approximately 3 dB at 10 kHz. This roll off mimics the decline in frequency response experienced when listening to a system from a distance in a typically reverberant room or auditorium.

CPL function
The CPL (Coupling) function compensates for coupling effects between closely coupled cabinets by reducing the low and mid frequency level. CPL begins gradually around 1 kHz, with the maximum attenuation below 200 Hz. To achieve a balanced frequency response the CPL function can be set to dB attenuation values between 0 and –9. Positive CPL values create an adjustable low frequency boost (0 to +5 dB) and can be set when the system is used in full-range mode without subwoofers.

100 Hz mode
The 100Hz mode limits the upper operating frequency of the subwoofer to 100Hz, complementing top cabinets in full range mode.

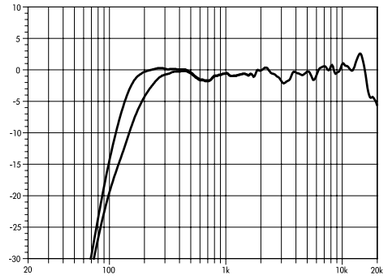
Maximum loudspeakers per D6, D12 or D80 channel

	4S	5S	8S	10S/10S-D	12S/12S-D	12S-SUB	18S-SUB	27S-SUB
	4	4	4	3	2	2	2	2

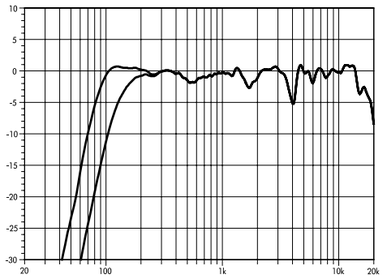
D6, D12 and D80 controller settings

	4S	5S	8S	10S/10S-D	12S/12S-D	12S-SUB	18S-SUB	27S-SUB
CUT	x	x	x	x	x			
HFA	x	x	x	x	x			
CPL	x	x	x	x	x			
100 Hz						x	x	x

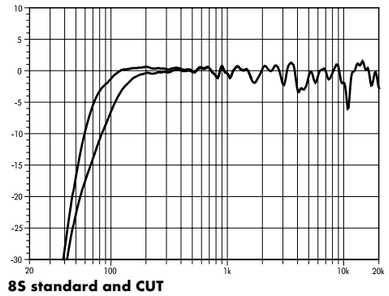
The xS-Series frequency responses



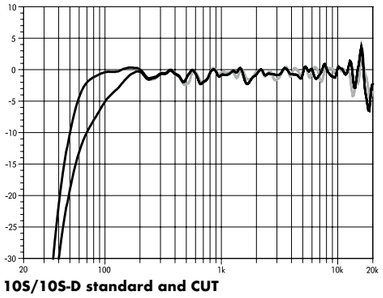
4S standard and CUT



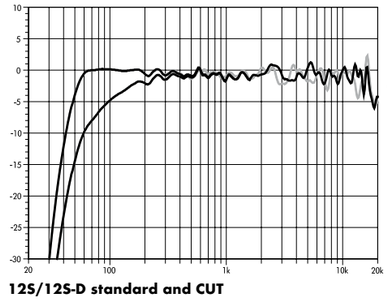
5S standard and CUT



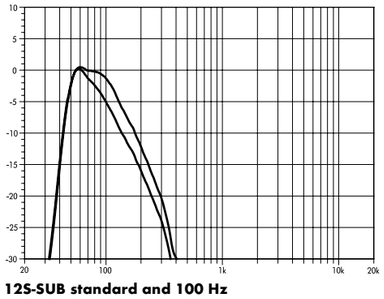
8S standard and CUT



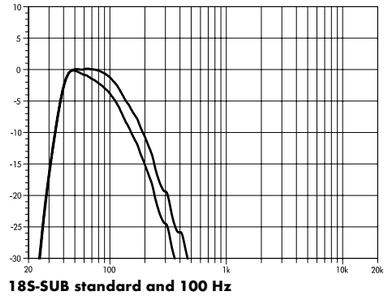
10S
10S-D
10S/10S-D standard and CUT



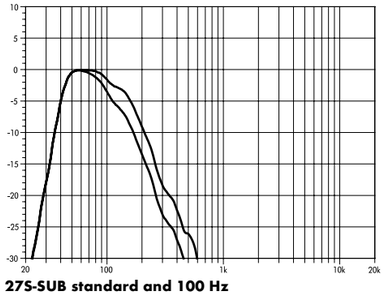
12S
12S-D
12S/12S-D standard and CUT



12S-SUB standard and 100 Hz

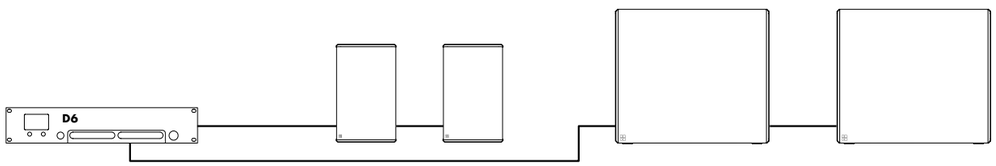


18S-SUB standard and 100 Hz

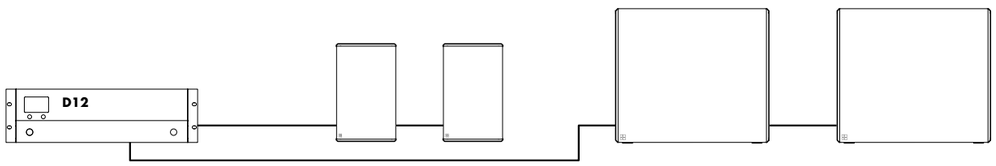


27S-SUB standard and 100 Hz

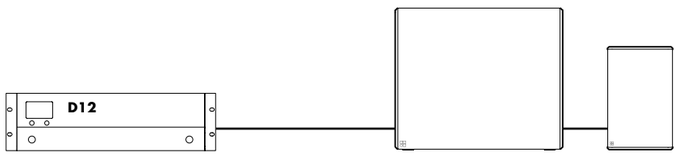
The d&b amplifier output modes



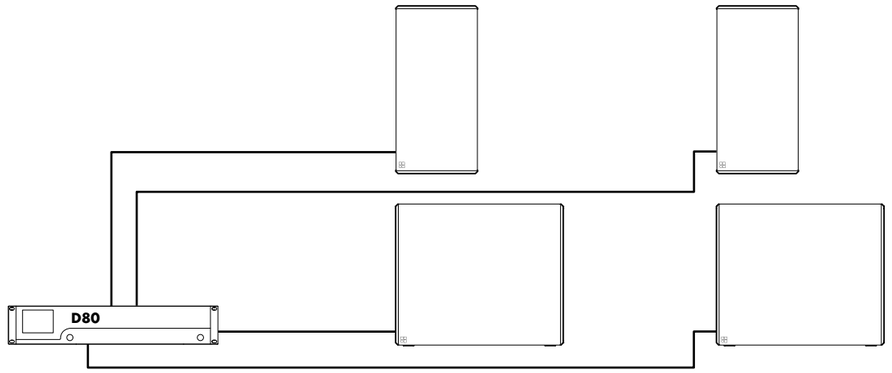
D6 amplifier in Dual Channel mode for 4S, 5S, 8S, 10S, 10S-D, 12S or 12S-D and 12S-SUB, 18S-SUB or 27S-SUB



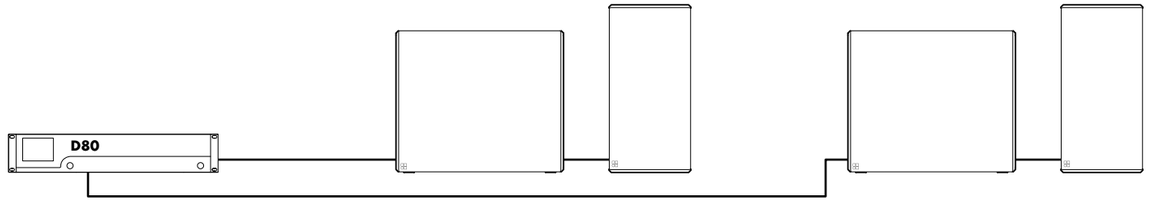
D12 amplifier in Dual Channel mode for 4S, 5S, 8S, 10S, 10S-D, 12S or 12S-D and 12S-SUB, 18S-SUB or 27S-SUB



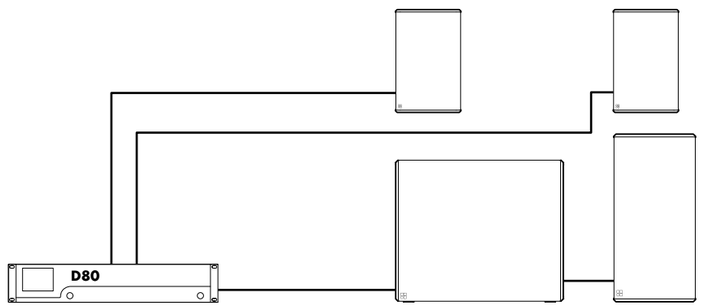
D12 amplifier in Mix TOP/SUB mode for 4S, 5S, 8S, 10S, 10S-D, 12S or 12S-D and 12S-SUB, 18S-SUB or 27S-SUB



D80 amplifier in Dual Channel mode for 4S, 5S, 8S, 10S, 10S-D, 12S or 12S-D and 12S-SUB, 18S-SUB or 27S-SUB

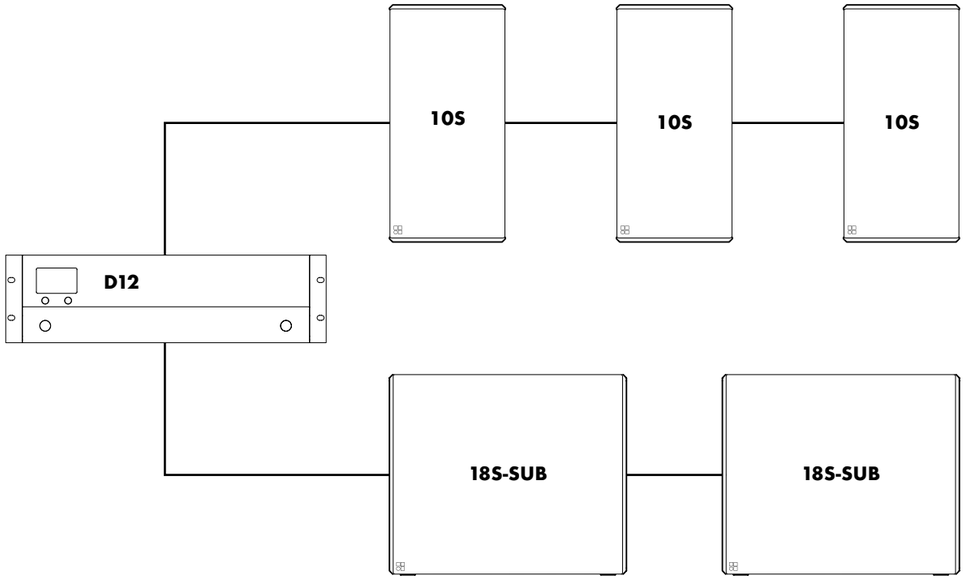


D80 amplifier in Mix TOP/SUB mode for 4S, 5S, 8S, 10S, 10S-D, 12S or 12S-D and 12S-SUB, 18S-SUB or 27S-SUB

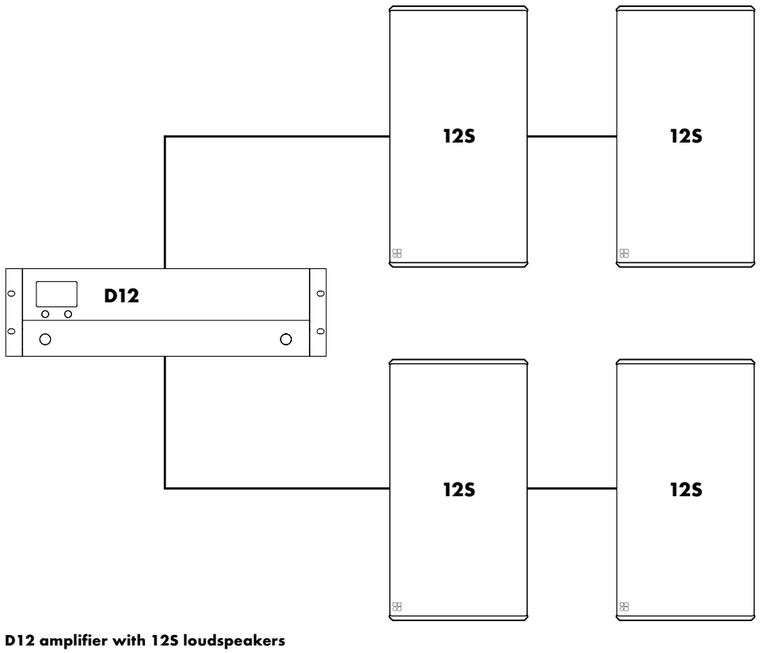


D80 amplifier in a mixed configuration of Dual Channel and Mix TOP/SUB modes for 4S, 5S, 8S, 10S, 10S-D, 12S or 12S-D and 12S-SUB, 18S-SUB or 27S-SUB

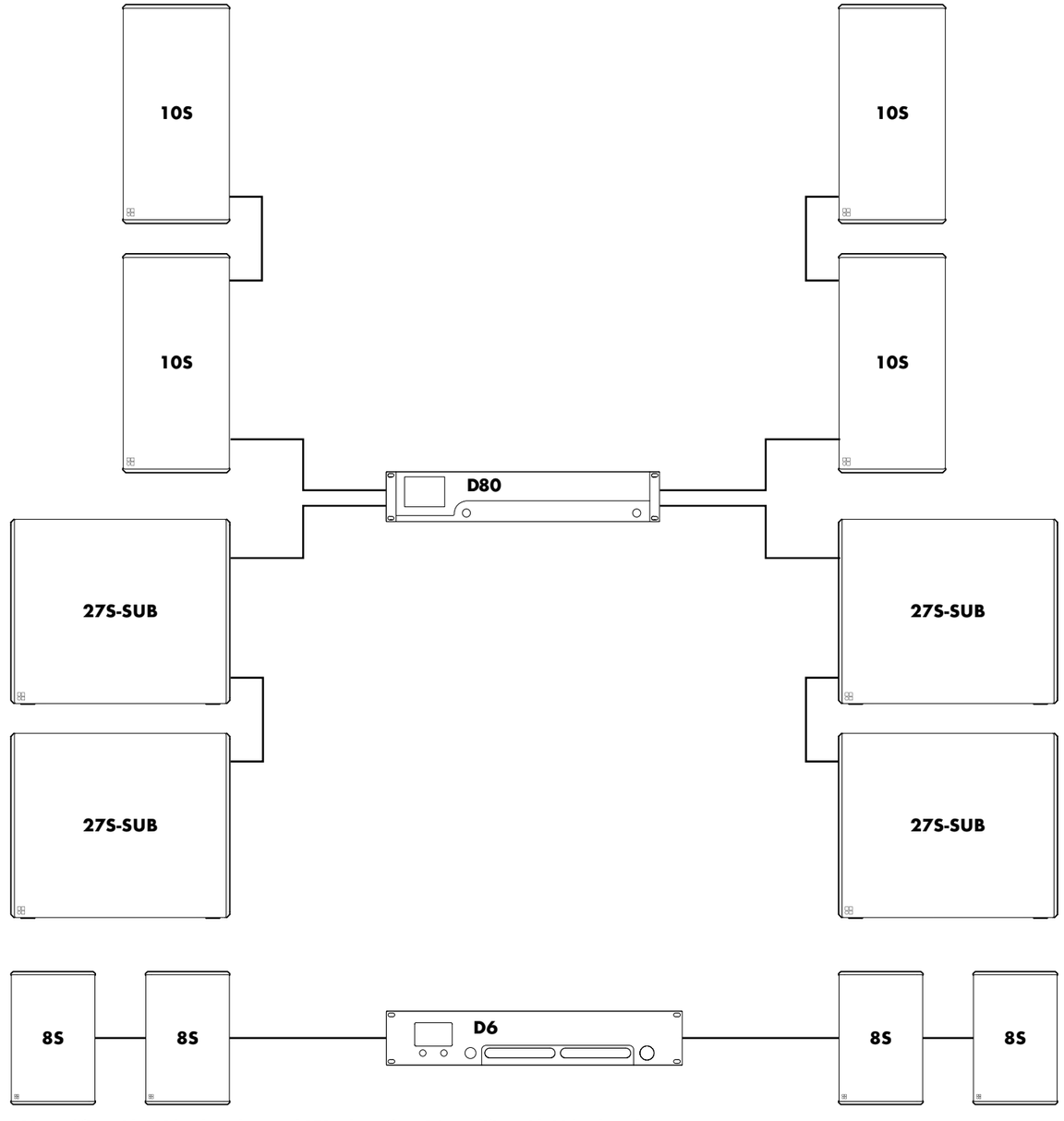
The xS-Series configuration examples



D12 amplifier with 10S loudspeakers and 18S subwoofers



D12 amplifier with 12S loudspeakers



D80 amplifier with 10S loudspeakers and 27S subwoofers, D6 amplifier with 8S loudspeakers

The xS-Series product overview

Loudspeakers	Z1510.000	**4S Loudspeaker**
	Z1510.001	**4S Loudspeaker white**
	Z1520.000	**5S Loudspeaker**
	Z1520.001	**5S Loudspeaker white**
	Z1540.000	**8S Loudspeaker**
	Z1540.001	**8S Loudspeaker white**
	Z1550.000	**10S Loudspeaker**
	Z1551.000	**10S-D Loudspeaker**
	Z1560.000	**12S Loudspeaker**
	Z1561.000	**12S-D Loudspeaker**
	Z1590.000	**12S Subwoofer**
	Z1590.001	**12S Subwoofer white**
	Z1570.000	**18S Subwoofer**
	Z1580.000	**27S Subwoofer**
		WR Weather Resistant[1]
		SC Special Colour[2]
Accessories	Z5401.000	**Wall mount S**[2]
	Z5401.001	**Wall mount S white**
	Z5402.000	**Wall mount M**[2]
	Z5402.001	**Wall mount M white**
	Z5403.000	**Wall mount L**[2]
	Z5403.001	**Wall mount L white**
	Z5404.000	**8S Flying bracket**[2]
	Z5404.001	**8S Flying bracket white**
	Z5405.000	**10S Flying bracket**[2]
	Z5406.000	**12S Flying bracket**[2]
	Z5408.000	**8S Horizontal bracket**[2]
	Z5408.001	**8S Horizontal bracket white**
	Z5409.000	**10S Horizontal bracket**[2]
	Z5410.000	**18S/27S-SUB Horizontal bracket**[2]
	Z5411.000	**12S Horizontal bracket**[2]
	Z5412.000	**12S-SUB Horizontal bracket**[2]
	Z5412.001	**12S-SUB Horizontal bracket white**
	Z5020.000	**Flying adapter 02**
	Z5025.000	**Flying adapter 03**
	Z5354.000	**E8/E12 Flying adapter**
	Z5355.000	**E8/E12 Flying adapter link**
	Z5054.000	**Ci60/Ci90 Flying adapter**
	Z5053.000	**Ci60/Ci90 Bracket connector**
	Z5044.000	**MAX Bracket connector**[3]
	Z5015.000	**TV spigot for Flying adapter 02**
	Z5029.000	**TV spigot M10**
	Z5010.000	**TV spigot with fixing plate**
	Z5012.500	**Pipe clamp for TV spigot**
	E6532.000	**Super clamp**
	Z5147.000	**Rota clamp**
	E6533.000	**Adapter M10 for Super clamp**
	Z5034.000	**Stand adapter M10**
	Z5035.000	**Adapter M10 to 3/8"**
	Z5024.000	**Loudspeaker stand adapter**
Remote network	Z3010.000	**R1 Remote control software**[1]
	Z6118.000	**R60 USB to CAN interface**
	Z6124.000	**R70 Ethernet to CAN interface**
	Z6116.000	**RJ 45 M Terminator**
	Z6122.000	**Bopla mounting clamp**
	Z6123.000	**Bopla mounting clamp upright**
Amplifiers	Z2700.xxx	**D6 Amplifier NL4**
	Z2600.xxx	**D12 Amplifier**[2]
	Z2710.xxx	**D80 Amplifier**[2]

1 WR on request
2 SC on request
3 supplied in pairs

1 available as a download at www.dbaudio.com
2 the complete list of amplifier versions is available in the d&b Amplifier and Software brochure

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